ABSTRACT

Human cognition relies on the ability to extract stable meaning from variable and often noisy conditions. Although individuals maintain a subjective sense of coherence, psychological science has lacked a mechanistic account of how meaning stabilizes, how it fails, and why trauma and physiological dysregulation disrupt interpretation. The present article introduces a formal theory in which meaning is structured around **semantic invariants**—entropy-minimizing attractors within a multidimensional feature space—and **discernment** is defined as the system's capacity to align current representations with these invariants. Semantic chunks remain coherent only when system entropy remains below a critical threshold; trauma, inflammation, and existential threat raise entropy across semantic, physiological, and relational levels, destabilizing attractors and producing fragmentation, misinterpretation, and dissociation. The model provides a mathematical characterization of essence, reframes assimilation and accommodation as entropy-regulated processes, and unifies cognitive development, trauma responses, and conceptual change under a single architecture (Clark, 2013; Piaget, 1952). Predictions include quantifiable signatures of chunk collapse, entropy thresholds for meaning instability, and specific behavioral and physiological markers of impaired discernment. The framework offers new directions for empirical investigation and clinical application.

Keywords: discernment, entropy, essence, trauma, invariants, semantic collapse, accommodation, inflammation

---

1. Introduction: Meaning, Entropy, and the Problem of Discernment

Human cognition depends on the ability to extract stable meaning from conditions that are variable, ambiguous, and noisy. The sensory stream is rich and often conflicting; social contexts shift; internal bodily states fluctuate. Yet people typically experience a sense that the world "makes sense," that events form coherent patterns rather than random fragments. Classic models have explained aspects of this capacity—working memory and chunking (Baddeley, 2012; Miller, 1956), causal and conceptual structure (Gärdenfors, 2000; Shepard, 1987; Tversky, 1977), and predictive processing (Clark, 2013; Hohwy, 2013)—but none has directly targeted the question of how meaning remains stable in the face of entropy, nor why it collapses so dramatically under trauma or physiological threat.

The present theory addresses this gap by proposing that cognition is organized around **semantic invariants**—essences—that function as low-entropy attractors in a high-dimensional representational space. **Discernment** is defined as the system's capacity to align its moment-to-moment representations with these invariants. When entropy remains manageable, representations converge on stable attractors and meaning is coherent. When entropy rises—due to semantic ambiguity, chronic inflammation, autonomic dysregulation, or existential threat—

these attractors destabilize, representational clusters fragment or distort, and the mind loses its ability to cohere experience.

This framework builds on and extends several traditions. Developmentally, it provides a mechanistic account of Piaget's assimilation–accommodation cycle: assimilation is stable alignment with an invariant, whereas accommodation is entropy-driven reorganization when the invariant fails (Piaget, 1952). Computationally, it complements predictive processing models by treating internal models not merely as priors but as entropy-minimizing attractors whose stability depends on system state (Clark, 2013; Hohwy, 2013). Dynamical systems perspectives similarly emphasize that apparent stability emerges from ongoing self-organization in a noisy system (Kelso, 1995; Van Gelder, 1998). Here, that self-organization is made explicit in terms of semantic entropy and invariant detection.

The goals of this article are threefold: (a) to define discernment as a formal construct grounded in invariance and entropy; (b) to explain how meaning is preserved and how it fails under trauma and physiological dysregulation; and (c) to derive testable predictions and empirical pathways for a new science of meaning stability.

---

2. What Is Discernment?

Discernment is often described colloquially as "seeing clearly," "knowing what is real," or "seeing through the noise." Such descriptions capture phenomenology but not mechanism. Within the present framework, discernment is defined as the **system's capacity to detect and maintain the invariant semantic structure that underlies contextual variation**.

Invariants are not metaphysical essences; they are **functional attractors** in a semantic feature space. Consider a concept such as *trust*. It may be expressed through verbal commitments, consistent actions, or subtle relational signals. Each instance differs, yet these expressions cluster around an underlying core. That core—the point that best organizes the cluster—is the invariant. Discernment is the capacity to keep current interpretations close to that core despite variability in surface features and internal state.

This definition dissociates discernment from higher-order reasoning or metacognitive monitoring. One can reason extensively while still misinterpreting a situation if the representational attractors are distorted, and one can be metacognitively aware of uncertainty without having access to a stable invariant. Discernment is a property of the **representational landscape**, not of deliberate choice. It reflects whether the system is in a state where invariants are detectible, not whether the person is trying to be careful.

This framing naturally links discernment to Piaget's assimilation and accommodation. When new input can be interpreted without destabilizing an existing invariant, assimilation occurs. When entropy increases to the point that the invariant can no longer organize experience, accommodation is forced (Piaget, 1952). Trauma, chronic stress, and physiological dysregulation all raise baseline entropy, making assimilation fragile and accommodation chaotic. Discernment, in this view, is the **anti-noise mechanism** of cognition: the system's ability to retrieve essence from variation and maintain meaningful structure.

---

3. Entropy and the Collapse of Semantic Chunks

Cognitive processing depends on **semantic chunks**—coherent representational units that compress multiple attributes into a usable structure (Baddeley, 2012; Miller, 1956). Chunks can be viewed as attractor states in a semantic space: many possible inputs are pulled into the same basin and treated as instances of the "same" object, concept, or situation (Gärdenfors, 2000; Shepard, 1987). Chunking is therefore an entropy-reducing operation: it replaces high-variance input with low-variance, invariant-anchored structure.

Entropy in this system refers to **representational uncertainty and dispersion**. Semantic entropy reflects ambiguity, excessive qualifiers, contradictory attributes, or unstable contextual cues. Physiological entropy reflects variability in interoceptive signals due to inflammation, metabolic fluctuation, or autonomic instability (Barrett et al., 2016; Pessoa, 2009). Existential entropy reflects instability in core meaning structures such as identity, belonging, and safety—factors heavily impacted by attachment and trauma.

Chunks remain stable only while total entropy remains below a system-specific threshold. Let the set of realizations of a chunk be represented as vectors in a semantic space. When these cluster tightly, variance is low, and the chunk's invariant essence is accessible. As entropy increases, the cluster broadens, splits, or drifts; the invariant becomes harder to detect. Once entropy exceeds a critical boundary, the chunk **collapses**: attributes no longer converge, the attractor shallows, and alternative interpretations compete without resolution.

Phenomenologically, collapse manifests in several patterns that are familiar in clinical and experimental settings:

- **Overgeneralization**: category boundaries broaden and "everything feels like everything else," as in anxiety generalization.
- **Fragmentation**: representations fail to integrate, as in dissociated memory or identity diffusion.
- **Rigidity**: the chunk narrows around a distorted core, leading to black-and-white reasoning or dogmatic beliefs.
- **Substitution**: high-entropy input is forced into an inappropriate but stable attractor, leading to projection or misreading of social cues.

These failure modes emerge naturally when attractors destabilize in a noisy system (Kelso, 1995; Van Gelder, 1998). They are not arbitrary "symptoms" but signatures of how a high-entropy cognitive system attempts to preserve structure when invariants can no longer be accurately accessed.

Trauma accelerates chunk collapse because it elevates entropy simultaneously across semantic, physiological, and existential domains. Ambiguous cues become threatening, bodily signals become noisy, and core assumptions about safety and trust become unstable (Phelps & LeDoux, 2005). Under such conditions, the system cannot maintain coherent attractors; meaning cannot hold. Discernment is therefore compromised not by lack of insight but by an unfavorable entropy regime.

---

4. The Mathematical Form of Essence

To make essence scientifically tractable, it must be formalizable. Let each representation of a concept or situation be modeled as a vector $x$in an n-dimensional semantic feature space S, where dimensions encode contextual, affective, relational, or conceptual attributes (Gärdenfors, 2000). A concept or narrative has many realizations—paraphrases, perceptual instances, relational episodes—forming a set $\mathcal{X} \subset S$.

Essence is defined as the semantic point that best minimizes the entropy of this set:

$$E^* = \arg\min_{y \in S} H(\mathcal{X} \mid y)$$

where $H(\mathcal{X} \mid y)$denotes the conditional entropy of the realizations given a candidate invariant y. Intuitively, when $y$coincides with the true invariant, the representations cluster tightly around it and conditional entropy is minimized; when $y$deviates, variance and entropy increase.

Chunk stability can be further characterized by its **within-chunk variance**,

$$\sigma^2(E^*) = \frac{1}{|\mathcal{X}|} \sum_{x \in \mathcal{X}} \| x - E^* \|^2,$$

and **between-chunk separability**, the distance between invariants of different concepts (Shepard, 1987; Tversky, 1977). Coherent meaning requires low within-chunk variance and high between-chunk separability. As entropy increases, variance rises and separability shrinks, increasing the risk of misclassification, fusion, or collapse.

Discernment can then be operationalized as the **alignment** between a current representation $x$and its invariant E^*. A simple Discernment Index (DI) can be defined as

$$DI(x) = 1 - \frac{\| x - E^* \|}{D_{\text{norm}}},$$

where D_{norm} is a normalization constant. High DI indicates close alignment with essence and stable meaning; low DI indicates divergence and instability. This formalization yields precise, testable predictions about how threat, inflammation, and relational safety should alter discernment.

Assimilation and accommodation become geometrically interpretable. Assimilation occurs when input remains within an acceptable radius ϵ of the invariant ($\| x - E^* \| \leq \epsilon$); accommodation is forced when distance and entropy both surpass system tolerances, making the old invariant unusable (Piaget, 1952). Accommodation thus becomes an entropy-regulated search for a new attractor capable of minimizing variance under changed conditions.

---

5. Trauma, Inflammation, and Entropy

Trauma and chronic physiological threat are central test cases for the theory. They produce well-documented distortions in perception, memory, emotion regulation, and self-representation, yet existing frameworks often treat these as separate domains. The entropy–essence model instead views trauma as a **multi-level entropy amplifier** that overwhelms invariance detection.

At the semantic level, traumatic experiences load ordinary cues with high affective charge and ambiguity. Facial expressions, tones of voice, or ambiguous situations acquire multiple competing interpretations—dangerous, shameful, rejecting—preventing convergence on a single invariant. At the physiological level, trauma is associated with altered autonomic regulation, chronic inflammation, and stress hormone dysregulation, all of which introduce noise into interoceptive channels (Barrett et al., 2016; Moser et al., 2013; Pessoa, 2009). At the existential level, trauma destabilizes core assumptions about safety, trust, and self-worth, undermining the foundational invariants that typically constrain interpretation.

When these forms of entropy converge, semantic chunks become fragile. Ordinary experiences that would be smoothly assimilated now trigger unstable or chaotic accommodation. Representations rapidly reorganize but fail to settle into coherent attractors. Clinically, this is visible as emotional flooding, hypervigilance, fragmentation of memory, and sudden shifts in self-state or perception of others (Phelps & LeDoux, 2005).

Dissociation can be reconceptualized as an entropy-management strategy: when global coherence is impossible, the system partitions representational space into locally coherent compartments. Each subset preserves low-entropy structure within itself but sacrifices integration across subsets. This explains how individuals can function competently in narrow domains while lacking a stable sense of global self or narrative continuity.

Hypervigilance is similarly interpretable. Under high existential and physiological entropy, threat interpretations become lower-entropy attractors than nuanced or benign interpretations: “unsafe” is a simpler, more stable organizing principle than “complex but mostly safe.” The system therefore defaults to danger detection, not as a cognitive bias but as an entropy-minimizing solution under constrained conditions.

Crucially, the model predicts that healing requires both psychological and physiological entropy reduction. Enhancing relational safety, improving sleep, lowering inflammation, stabilizing glucose variability, and cultivating autonomic flexibility should all deepen attractor basins and restore access to invariants. People’s reports of “feeling like myself again” or “seeing things clearly” can be understood as a return to low-entropy conditions in which essence is once again detectable.

---

6. Predictions of the Entropy–Essence Model

A viable theory must generate specific, falsifiable predictions. The entropy–essence model yields several.

First, there should be a **monotonic relationship** between system entropy and meaning stability. As entropy increases—via manipulations of cognitive load, noise, or stress—semantic representations should show greater dispersion, lower DI scores, and more frequent collapse patterns (overgeneralization, fragmentation, rigidity, substitution). Behavioral markers such as reaction time variability, confidence calibration, and interpretive consistency should degrade accordingly (Kahneman, 2011; Moser et al., 2013).

Second, individuals with trauma histories should exhibit higher baseline entropy. Even in ostensibly neutral tasks, they should show greater semantic dispersion, reduced representational coherence, and lower thresholds for chunk collapse, alongside increased variability in physiological markers such as heart rate variability and inflammatory indicators (Barrett et al., 2016; Pessoa, 2009; Phelps & LeDoux, 2005).

Third, inflammation should impair invariance detection. Elevated inflammatory markers (e.g., IL-6, CRP) and high glucose variability should correlate with poorer extraction of gist, reduced accuracy in pattern completion or category learning tasks, and stronger reliance on rigid or stereotyped interpretations.

Fourth, dissociation should manifest as a reduction in **global** but not **local** coherence. Within a given self-state or context, representations should remain relatively stable, but integration across contexts should be impaired, producing abrupt shifts and weak cross-state correlations.

Fifth, interventions that reduce entropy—whether via physiological regulation, relational safety, or structured semantic scaffolding—should improve discernment. DI should rise before mood necessarily improves, predicting a temporal sequence in which meaning clarity precedes emotional stabilization.

Finally, conceptual change tasks should reveal threshold-like accommodation dynamics: participants should maintain existing invariants until entropy accumulation forces abrupt reorganization, mirroring observations in both child development and scientific paradigm shifts (Kuhn, 1962; Piaget, 1952).

---

7. Empirical Pathways: Testing the Theory

The theory suggests multiple empirical programs spanning behavior, physiology, computation, and clinical phenomena.

Behaviorally, semantic entropy can be manipulated via ambiguity, conflicting cues, or overload in paraphrase interpretation, gist extraction, or category learning tasks. Representational stability can be assessed using similarity judgments, response variability, and DI derived from embedding-based distances (Shepard, 1987; Tversky, 1977).

Physiologically, autonomic and inflammatory signals can be tracked alongside meaning-making tasks. Heart rate variability, inflammatory markers, and glucose variability can serve as indices of internal entropy. The model predicts systematic relationships between these variables and DI, beyond what would be expected from general arousal or mood (Barrett et al., 2016; Pessoa, 2009).

In trauma research, symptom activation (e.g., through mild reminders or relational stress) should correspond to drops in DI and shifts toward collapse modes. Longitudinal designs could map how DI fluctuates over days or weeks, revealing entropy-linked vulnerability windows.

Computationally, high-dimensional embeddings (e.g., from distributional semantic models) can approximate semantic spaces and invariants (Gärdenfors, 2000; Clark, 2013). Simulations can vary entropy by injecting noise, altering attractor structure, or shifting priors to explore when and how collapse occurs.

Clinically, interventions designed to reduce physiological noise (e.g., anti-inflammatory treatments, autonomic regulation techniques) and increase relational safety can be evaluated not only for symptom improvement but for changes in DI and representational stability.

Together, these pathways support a rich empirical agenda for validating or revising the entropy–essence architecture.

---

8. Distinguishing Discernment From Related Constructs

Discernment intersects with several established constructs but is not reducible to any of them.

Attention is the selective allocation of processing resources to certain inputs over others (Awh et al., 2012). It regulates what is processed, not whether the resulting representations are stable. One can attend fully to a stimulus yet misinterpret it if attractors are distorted by high entropy. Discernment presupposes attention but concerns the structural integrity of meaning.

Judgment and decision-making frameworks describe how choices are made under uncertainty, often emphasizing heuristics, biases, or accumulation of noisy evidence (Kahneman, 2011). These models assume reasonably stable representations on which decisions operate. When chunks collapse, even optimal decision rules can produce erratic outcomes. Discernment addresses the stability of the representational substrate on which judgments are based.

Metacognition involves awareness of one's knowledge states and confidence calibration. It can be accurate or inaccurate, but it does not guarantee access to invariants. A person may correctly report "I am confused" without knowing why, or may feel certain while relying on distorted attractors. Discernment is thus a pre-metacognitive property: it determines whether there is a stable "something" to be monitored.

Coherence and cognitive consistency theories emphasize alignment among beliefs and perceptions. Coherence is a relational property among representations. Discernment concerns whether the representations themselves reliably approximate essence. A system can be highly coherent yet far from invariant structure, as in tightly organized but delusional belief systems.

Schema theory and predictive processing describe how priors shape perception and interpretation (Clark, 2013; Hohwy, 2013; Piaget, 1952). However, these models generally do not formalize representational entropy or specify how invariants are computed or lost under extreme conditions. The entropy–essence framework offers a complementary layer: it describes when schemas or prediction models are structurally capable of stabilizing meaning and when they are not.

By distinguishing discernment from these related constructs, the theory clarifies that it is not an aspect of executive control, metacognition, or reasoning style, but a structural property of the representational landscape: the degree to which meaning can remain anchored to invariant essence in the face of entropy.

---

9. General Discussion and Integration

This article has proposed that cognition is best understood as an entropy-regulated system organized around semantic invariants. Meaning stabilizes when entropy remains low enough for invariants to anchor interpretation, and collapses when entropy surpasses the system's tolerance. Under this architecture, discernment becomes the central construct: the mind's ability to identify and maintain essence across variation.

The theory integrates and extends several major traditions. It provides a mechanistic account of Piagetian assimilation and accommodation (Piaget, 1952); reinterprets working memory constraints as entropy limits rather than simple capacity boundaries (Baddeley, 2012; Miller, 1956); situates predictive processing priors as entropy-minimizing attractors whose stability depends on system state (Clark, 2013; Hohwy, 2013); and aligns with dynamical systems views that treat cognitive stability as emergent from self-organization in noisy systems (Kelso, 1995; Van Gelder, 1998).

Importantly, the framework is consistent with contemporary views that the environment is inherently uncertain and that internal models are provisional. Invariants, as defined here, are not claims about timeless truths but **functional attractors**: temporary reductions of entropy that make experience navigable. They persist only while they continue to minimize representational dispersion under current conditions. When entropy rises, they reorganize or collapse.

The model also offers a unifying account of trauma-related phenomena. Rather than treating emotional dysregulation, dissociation, hypervigilance, and cognitive fragmentation as unrelated symptoms, it interprets them as manifestations of a single process: the loss of access to invariants when entropy overwhelms the system. This reconceptualization suggests that clinical interventions should be evaluated not only in terms of symptom reduction but also in terms of their capacity to restore meaning stability.

Finally, the entropy–essence framework opens a new empirical program. It suggests that meaning stability can be quantitatively measured, that it should covary predictably with physiological and contextual entropy, and that discernment can serve as a core index of cognitive health. In doing so, it shifts attention from the content of beliefs and emotions to the architecture that allows those contents to be coherently maintained.

---

10. Limitations

Several limitations of the present framework must be acknowledged. First, the mathematical formalization of essence relies on an abstract semantic feature space and entropy metrics that are not uniquely specified. Different embedding methods or feature choices may yield different invariants. The theory provides a structural blueprint rather than a fully instantiated computational model.

Second, the proposed Discernment Index is a conceptual construct that requires operationalization. Precise estimation of E^* and DI in humans will depend on advances in representational modeling and careful task design. The current proposal outlines how such a metric could be defined but does not specify a single canonical implementation.

Third, while the theory posits relationships between physiological entropy (e.g., inflammation, HRV) and meaning stability, the causal pathways are likely to be complex and bidirectional. Physiological dysregulation may both influence and be influenced by cognitive and emotional states (Barrett et al., 2016; Pessoa, 2009). The present framework emphasizes one direction (entropy → meaning) as a starting point, but reciprocal loops must be incorporated in future work.

Fourth, the theory intentionally abstracts away from individual differences in temperament, learning history, and culture. Such factors likely modulate entropy thresholds, attractor geometry, and the subjective experience of collapse. Integrating personality, developmental history, and sociocultural context into the model remains an important task.

Finally, the framework focuses on dysfunction primarily through the lens of trauma and chronic threat. Other domains of psychopathology (e.g., psychosis, neurodegenerative disease) may involve distinct entropy–essence dynamics that require further elaboration.

---

11. Future Directions

Future research can extend and refine the entropy–essence model in several ways.

First, computational work can instantiate explicit attractor networks and embedding-based models that implement essence, entropy, and DI. These models can be tested under simulated perturbations to predict collapse patterns, then compared against human behavioral data.

Second, empirical programs can focus on developing robust DI measures across tasks and populations. For example, paradigms that estimate personal invariants for core concepts (self, others, safety, God, etc.) and track DI across days, states, or interventions could reveal individual meaning-stability profiles.

Third, longitudinal studies can examine how entropy and discernment co-evolve across development and in recovery from trauma. Do improvements in physiological regulation precede changes in meaning stability? Are there sensitive periods in which entropy exposures have disproportionate impact on invariants?

Fourth, integration with neuroscientific methods such as representational similarity analysis and network-based metrics could link the semantic attractor landscape to functional brain organization (Pessoa, 2009; Phelps & LeDoux, 2005). The model predicts specific patterns of neural clustering and network stability under varying entropy conditions.

Finally, conceptual work can explore how the entropy–essence architecture interfaces with moral psychology, spirituality, and epistemology—domains in which discernment is already a central but poorly defined construct.

---

12. Clinical Implications

The theory suggests several clinically relevant implications.

First, it reframes many trauma-related symptoms not as character flaws or irrational beliefs, but as **structural responses** of a high-entropy system struggling to preserve coherence. This framing may reduce shame and self-blame and guide interventions toward restoring invariants rather than merely challenging "distorted thoughts."

Second, assessment can expand beyond symptom checklists to include measures of meaning stability. Repeated DI assessments across contexts may help clinicians identify when a client's representational system is approaching collapse and which domains (e.g., self, others, future) are most fragile.

Third, interventions that reduce physiological and existential entropy—such as sleep stabilization, anti-inflammatory strategies, autonomic regulation practices, and relational safety—should be prioritized alongside cognitive techniques. The model predicts that cognitive restructuring will be more effective when undertaken in low-entropy states in which invariants are accessible.

Fourth, dissociation can be approached not only as a target for elimination but as an adaptive partitioning strategy that preserved local coherence when global coherence was impossible. Treatment can then focus on gradually lowering entropy and integrating partitions, rather than forcing premature exposure to high-entropy states.

Finally, the notion of discernment as a measurable construct opens the possibility of therapies that explicitly aim to strengthen invariant detection—for example, by training clients to identify and return to core meanings that remain stable even when surface experiences fluctuate.

References

Awh, E., Belopolsky, A. V., & Theeuwes, J. (2012). Top-down versus bottom-up attentional control. *Trends in Cognitive Sciences, 16*(8), 437–443.

Baddeley, A. (2012). Working memory: Theories, models, and controversies. *Annual Review of Psychology, 63*, 1–29.

Barrett, L. F., Quigley, K. S., & Hamilton, P. (2016). An active inference theory of emotion. *Psychological Review, 123*(3), 293–321.

Clark, A. (2013). Whatever next? Predictive brains, situated agents, and the future of cognitive science. *Behavioral and Brain Sciences, 36*(3), 181–204.

Gärdenfors, P. (2000). *Conceptual spaces: The geometry of thought*. MIT Press.

Hohwy, J. (2013). *The predictive mind*. Oxford University Press.

Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux.

Kelso, J. A. S. (1995). *Dynamic patterns: The self-organization of brain and behavior*. MIT Press.

Kuhn, T. S. (1962). *The structure of scientific revolutions*. University of Chicago Press.

Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review, 63*(2), 81–97.

Moser, J. S., Moran, T. P., Schroder, H. S., Donnellan, B., & Yeung, N. (2013). On the relationship between anxiety and cognitive control: A neurocognitive perspective. *Psychological Science, 24*(1), 48–56.

Pessoa, L. (2009). How do emotion and motivation direct executive control? *Trends in Cognitive Sciences, 13*(4), 160–166.

Phelps, E. A., & LeDoux, J. E. (2005). Contributions of the amygdala to emotion processing: From animal models to human behavior. *Neuron, 48*(2), 175–187.

Piaget, J. (1952). *The origins of intelligence in children*. International Universities Press.

Shepard, R. N. (1987). Toward a universal law of generalization for psychological science. *Science, 237*(4820), 1317–1323.

Tversky, A. (1977). Features of similarity. *Psychological Review, 84*(4), 327–352.

Van Gelder, T. (1998). The dynamical hypothesis in cognitive science. *Behavioral and Brain Sciences, 21*(5), 615–665.

Figure 1. Attractor Landscape of Meaning Stability

```
              High Entropy ----------------------→
            ---------------------------------------
           |                                        |
           |                                       /
           |                                      /
        ^  |       Fragmentation                /
        |  |                                  /
Meaning |  |                             (Collapsed Basin)
Stability |                     _______/
        |  |          ________/
        |  |     ____/
        v  |  __/
           |_/       Overgeneralization
           |
           |
           |       (Stable Attractor Basin)
           |____        ________
                \______/        \______
                Low Entropy --------------------→
```

Caption. The attractor landscape of semantic meaning under varying entropy conditions. Under low entropy, representations converge into a deep, coherent attractor basin (essence). As entropy increases, the basin shallows and destabilizes, producing characteristic collapse modes: overgeneralization (basin broadening), rigidity (basin narrowing), fragmentation (basin splitting), and substitution (misassignment to an adjacent basin). Trauma, inflammation, and existential threat raise entropy and shift representations upward into collapse zones, whereas safety, physiological regulation, and semantic scaffolding deepen the basin and restore discernment.

If you want, next step I can do is: